

Ornithological records from the lowlands of southern Laos during December 1995-September 1996, including areas on the Thai and Cambodian borders

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Records are presented from the lowlands of Champasak and Salavan provinces, southern Laos, during the period December 1995 – September 1996 for four areas where major surveys were conducted (Phou Xiang Thong and Dong Hua Sao National Biodiversity Conservation Areas, Dong Khanthung Proposed Protected Area and the course of the Mekong river) and several areas where briefer surveys were conducted. Six Globally Threatened and thirteen Globally Near-threatened species were found, as well as 22 others considered to be At Risk in Laos or Potentially At Risk in Laos.

The community of birds of conservation concern in each survey area is outlined. Dong Khanthung was of outstanding importance, especially for large waterbirds. It was one of only three sites in Laos where the Giant Ibis *Pseudibis gigantea* was known to survive and the only site where adjutants *Leptoptilos* were known to breed in Laos. White-winged Duck *Cairina scutulata* and Green Peafowl *Pavo muticus* were also recorded. Phou Xiang Thong was relatively poor in species but supported moderate numbers of Green Peafowl. Dong Hua Sao was fairly rich in species of conservation concern, but many occurred at low densities. The stretch of the Mekong surveyed supported significant populations of some riverine birds, such as terns and waders, which have declined in Laos.

Records of nine species (Slaty-legged Crake *Rallina eurizonoides*, Sanderling *Calidris alba*, Red-necked Stint *Calidris ruficollis*, Curlew Sandpiper *Calidris ferruginea*, Ruff *Philomachus pugnax*, Red-necked Phalarope *Phalaropus lobatus*, Asian Openbill *Anastomus oscitans*, Yellow-vented Bulbul *Pycnonotus goiavier* and Asian Golden Weaver *Ploceus hypoxanthus*) are the first confirmed for Laos, with seven others new for South Laos. Two species, White-winged Tern *Chlidonias leucopterus* and Red-vented Barbet *Megalaima lagrandieri*, were apparently new records for Cambodia.

INTRODUCTION

This paper presents bird records from the lowlands of Champasak and Salavan provinces, southern Laos, during the period December 1995 – September 1996. Records came from four areas where major surveys were conducted (Phou Xiang Thong and Dong Hua Sao National Biodiversity Conservation Areas (NBCAs), Dong Khanthung Proposed NBCA and the course of the Mekong river) and several areas where briefer surveys were conducted. Rapid assessments of populations of birds and large mammals were the main objectives, concentrating on species of elevated conservation concern (termed 'Key species'). This paper provides baseline status information for all bird species observed with fuller information for records of particular interest. Key bird species communities are discussed; detailed accounts of almost all individual Key bird species are presented in Thewlis *et al.* (1998).

This is one of a number of recent distributional papers on Lao birds. Those covering the period October 1992 to September 1996 are listed in Table 1, for the convenience of the reader.

Two of the main 1996 survey areas were existing National Biodiversity Conservation Areas (NBCAs); Phou Xiang Thong NBCA and Dong Hua Sao NBCA. Management implementation began at these two reserves on a small scale in February 1996, financed in part by the Dutch Government through their support for the Lao Ministry of Agriculture and Forestry's Biodiversity Conservation Project, with technical support from IUCN. The principal survey objective at both sites was to identify priorities for conservation management action. The Dong Khanthung region was investigated to assess its potential for establishment as a protected area. The fourth survey area was the Mekong river (downstream of Phou Xiang Thong NBCA to the Cambodian border), where the main objective was to gather data on the status of river-dependent species. In all four survey areas work was conducted in co-operation with the Centre for Protected Areas and Watershed Management of the Department of Forestry of the Ministry of Agriculture and Forestry of the Government of Laos.

Table 1. Main survey areas covered by recent papers on the distribution of Lao birds

Paper	Dates covered	Main survey area	Other major survey areas
Thewlis <i>et al.</i> (1996)	October 1992 to October 1993	Houay Nhang Nature Reserve, Xe Pian, Phou Xang He and Dong Hua Sao NBCAs	Mekong in Champasak Province, Phou Khaokhoay NBCA
Evans and Timmins (1998)	January to August 1994	Nakay-Nam Theun and Xe Bang-Nouan NBCAs, Nam Theun Extension Proposed NBCA and the Nakay Plateau	Khammouane Limestone and Phou Khaokhoay NBCAs
Duckworth <i>et al.</i> (1998a)	October 1994 to August 1995	Phou Khaokhoay, Nam Kading, Khammouane Limestone and Phou Dendin NBCAs, the Nakay Plateau and the Xe Namnoy catchment	Xe Pian and Nakay-Nam Theun NBCAs, Bolovens Southwest Proposed NBCA
Current paper	November 1995 to September 1996	Dong Hua Sao and Phou Xiang Thong NBCAs, Dong Khanthung Proposed NBCA and the Mekong in Champasak Province	Xe Pian NBCA
Timmins and Tizard (in prep.)	November 1995 to September 1996	Nakay-Nam Theun, Hin Namno, Xe Sap, Phou Dendin and Khammouane Limestone NBCAs, Nam Theun Extension Proposed NBCA and the Nakay Plateau	
Duckworth (1996)	February/March and June/July 1996	Sangthong Training and Model Forest	

ABBREVIATIONS AND CONVENTIONS

NBCA stands for National Biodiversity Conservation Area. Taxonomy and nomenclature follow Inskipp *et al.* (1996). Scientific names are only given for species not listed in Appendix 1.

Other conventions follow Thewlis *et al.* (1996). Briefly:

- The division of Laos into three regions, North, Central and South (King *et al.* 1975, as modified by Thewlis *et al.* 1998 and discussed more explicitly by Duckworth *et al.* 1999) is followed throughout; all study sites were in 'South Laos'.
- Habitat names follow Round (1988) as expanded by Thewlis *et al.* (1998). Two notable departures from Round (1988) are:
 - a) in Dong Hua Sao NBCA, 'slope forest' is unlogged habitat on the hill slopes above about 250 m transitional between semi-evergreen and dry evergreen forest.
 - b) in Phou Xiang Thong, 'rocky savanna' is found on gently sloping sandstone outcrops. There are numerous extensive flats of bare sandstone, sometimes more than 100 m wide. These are interspersed with patches of gravel, short grasses, bamboo stands and groups of stunted trees, many of them dipterocarps.
- Place names follow the 1986-1987 1: 100,000 topographic maps of the Lao Service Geographique d'Etat, except those modified by Thewlis *et al.* (1998) with alternative names from the *Times Atlas of the World* (7th edition) in parentheses at first mention. Where there is no mapped name, the locally used name is followed throughout. Thewlis *et al.* (1998) give co-ordinates, altitudes and locally used equivalent names for most sites; the remainder are

presented in Appendix 2. Quan Mou (in Dong Hua Sao NBCA) was erroneously called 'Quan Moor' by Evans and Timmins (1996) and Thewlis *et al.* (1996).

- Key species are birds of recognized conservation concern in one or more of five categories: Globally Threatened or Globally Near-threatened, following Collar *et al.* (1994) At Risk, Potentially At Risk or Little Known in Laos, following Duckworth *et al.* (1999).

All dates refer to 1996 unless otherwise stated. There was a long period, from 1949 to 1991, when no ornithological surveys were conducted in Laos. Records from after this period are referred to in the text as 'recent records'. The only recent records of which the authors are aware up to the end of the period covered by this paper are those given by Robichaud (1992), Salter (1993) and the papers listed in Table 1.

STUDY SITES AND COVERAGE

Most sites in the text can be found on Figure 1.

Dong Hua Sao NBCA

31 January-1 March 1996. See Evans *et al.* (1996a). Dong Hua Sao NBCA lies in Champasak Province at 14°50' - 15°11' N, 105°55' - 106°17' E. The reserve covers about 910 km² of the southern Bolovens plateau, the intervening slope and adjacent lowlands. Most of the area (70%) lies below 250 m, but the sheer escarpment and plateau rise to over 1,000 m; the highest point is at 1,280 m. The birds of the reserve were first surveyed in 1993 (Thewlis *et al.* 1996). The present survey revisited some of the 1993 study sites and covered some new areas. Three principal habitats were covered in 1996, all of them in the lowlands - unlogged slope forest at 300-

600 m (mainly below 500 m), logged semi-evergreen forest on the flat lowlands at 200-300 m and mixed deciduous forest in the flat lowlands at 200-280 m. A large number of pools, seasonal and permanent, occur in the logged semi-evergreen forest and over 40 were visited. Most were smaller than 1 ha but some were up to 25 ha.

Phou Xiang Thong NBCA

5-30 March 1996. See Evans *et al.* (1996b).

Phou Xiang Thong NBCA lies in Champasak and Salavan Provinces at 15°19' - 15°56'N, 105°25' - 105°47'E. The reserve covers 995 km², much lying at 100-300 m altitude, but with extensive hilly areas in the south and central portions at 300-650 m. The highest point is Phou Nangam (716 m). There had been no previous survey of wildlife in the reserve. Coverage in 1996 included most major stream catchments, but few areas above 400 m and none above 500 m were visited. Dry semi-evergreen forest interspersed with many small patches of deciduous forest types cover an estimated 700 km². This habitat was moderately heavily logged in the northern third of the reserve during 1989-91. Further south it has been logged by hand in some locations, but appeared elsewhere to have a naturally low canopy, lacking large-diameter trees. Taller forest occurs on the tops of several small plateaux, a total area of only a few km². The remainder of the reserve supports mixed deciduous forest, dry dipterocarp forest and open rocky savanna. These deciduous habitats form a complex mosaic with each other and with semi-evergreen forest. On the Thai side of the Mekong lies Pha Taem National Park (340 km²) which shares similar landforms and habitats to Phou Xiang Thong, with the exception that there is little or no semi-evergreen forest in Pha Taem (Srikosamatara and Sutteethorn 1994).

Phou Xiang Thong is drained by many seasonal streams, none wider than 12 m. The western edge of the reserve is formed by the Mekong river for about 90 km. The lower 75 km of the river were surveyed by boat, with most stretches being travelled 2-3 times. Many bird records along the river were referable to both Laos and Thailand. Where the banks are formed of earth the river is up to 500 m wide but along stretches totalling about 34 km it is constricted during the dry season to less than 200 m wide between rocky flats, low cliffs and pockets of sediment. There are a few rocky islands.

Dong Khanthung Proposed NBCA

28 April-5 May 1996. See Timmins and Vongkhamheng (1996).

9-14 and 17 August 1996.

There had been no previous survey of birds in the area, but concurrent with the April wildlife survey a team from the IUCN/Provincial Agriculture and Forestry Office Biodiversity Conservation Project conducted a four-day programme of interviews concerning Key wildlife species in the area (Berkmüller and Vilawong 1996).

The study sites lie in a virtually flat area of over 1,000 km² at 80-140 m. Dry dipterocarp forest in good condition covers about 30% of the area. It is dotted with pools and patches of fairly open grassland. The remainder is a mixed semi-evergreen/evergreen forest, generally of low stature but taller along watercourses (all of which were seasonal). This is the largest area of such habitat remaining in the flat lowlands of Laos. The human population density was low at the time of the survey, with only a handful of villages, partly because of the long history of trans-border hostilities here. The area has recently become more peaceful and new settlers were moving in. Resettlement schemes, silviculture, a large cattle-husbandry project and several rice-production schemes were planned in or near the area investigated.

Nam Lepou (Tonle Repou) was surveyed by canoe on 28-29 April. This river forms the Lao-Cambodian border and many records were referable to both countries.

A six-hour aerial survey was conducted from a light aircraft on 17 August.

Satellite imagery showed similar habitat to that of Dong Khanthung in adjacent areas of Cambodia, with a higher proportion of dry dipterocarp forest and some very extensive grassy plains. To the west, Dong Khanthung abutted the hilly Phou Chong Nayoi National Park (687 km²) in Thailand. Satellite imagery suggests that this has similar vegetation to Phou Xiang Thong, perhaps related to the similar geology of the two areas.

The area has since been surveyed in greater detail (Round 1998).

Mekong river south of Phou Xiang Thong NBCA

2-5 December 1995 (N. J. Dymond *in litt.* 1996), 4 March, 30 March (R. J. Tizard *in litt.* 1996) and 28 April-7 May 1996 (authors' data). See Table 2.

Table 2. Surveys along the Mekong in Champasak province in 1996

Stretch	Length/ km	Length of river with islands and sandbars/km	Date
Ban Singsamphanh south to Don Che/Don Chat	20	0	30 March
Don Che/Don Chat south to Pakxe (Pakse)	24	14	28 April (Don Kho only, on foot), 6 May (all, including several islands on foot)
Pakxe south to south end of Don Deng	37	18	7 May
Ban Napho south to Ban Veunkhen	50	34	5 May
Ban Veunkhen south to Don Xang (Seephandon area)	54	32	4 March (Ban Samkhang only), 28-29 April (following channel on west side of Seephandon area)

In addition to the surveys in Table 2, Ban Hangkhon was visited during 2-5 December 1995 and 29 April-4 May (the latter visit including areas up to 2 km upstream). The village is on one channel of the Mekong in the Seephandon ('Four Thousand Islands') area. The Ban Hangkhon channel here forms the border with Stung Treng Province, Cambodia, and many records were referable to both Laos and Cambodia. Brief visits were also made to Somphamit waterfall and a nearby village during the latter period.

A total of approximately 185 km of the Mekong was covered south of Phou Xiang Thong NBCA. There is a great diversity of habitat types along this stretch. The river itself and the larger islands mainly have steep, well-vegetated earth banks. These are lined with villages, cultivation and scrub except in Cambodia bordering the

Seephandon area, where some semi-evergreen forest occurs on the banks. Smaller islands generally support more natural vegetation (including scrub, grasslands and seasonally flooded woodland) and the main concentrations of riverine birds. Some smaller islands are low and sandy and others had tall earth banks topped by villages or degraded forest, whilst in areas of rapids they are often rocky and thickly covered with bushes. Some islands have very large sandy beaches or bars up to 10 km long.

Other sites visited

- The lower Xe Xou, Attapu Province was surveyed by boat on 27-28 February upstream to rapids about 4 hours beyond Ban Boonvay (R. J. Tizard *in litt.* 1996).

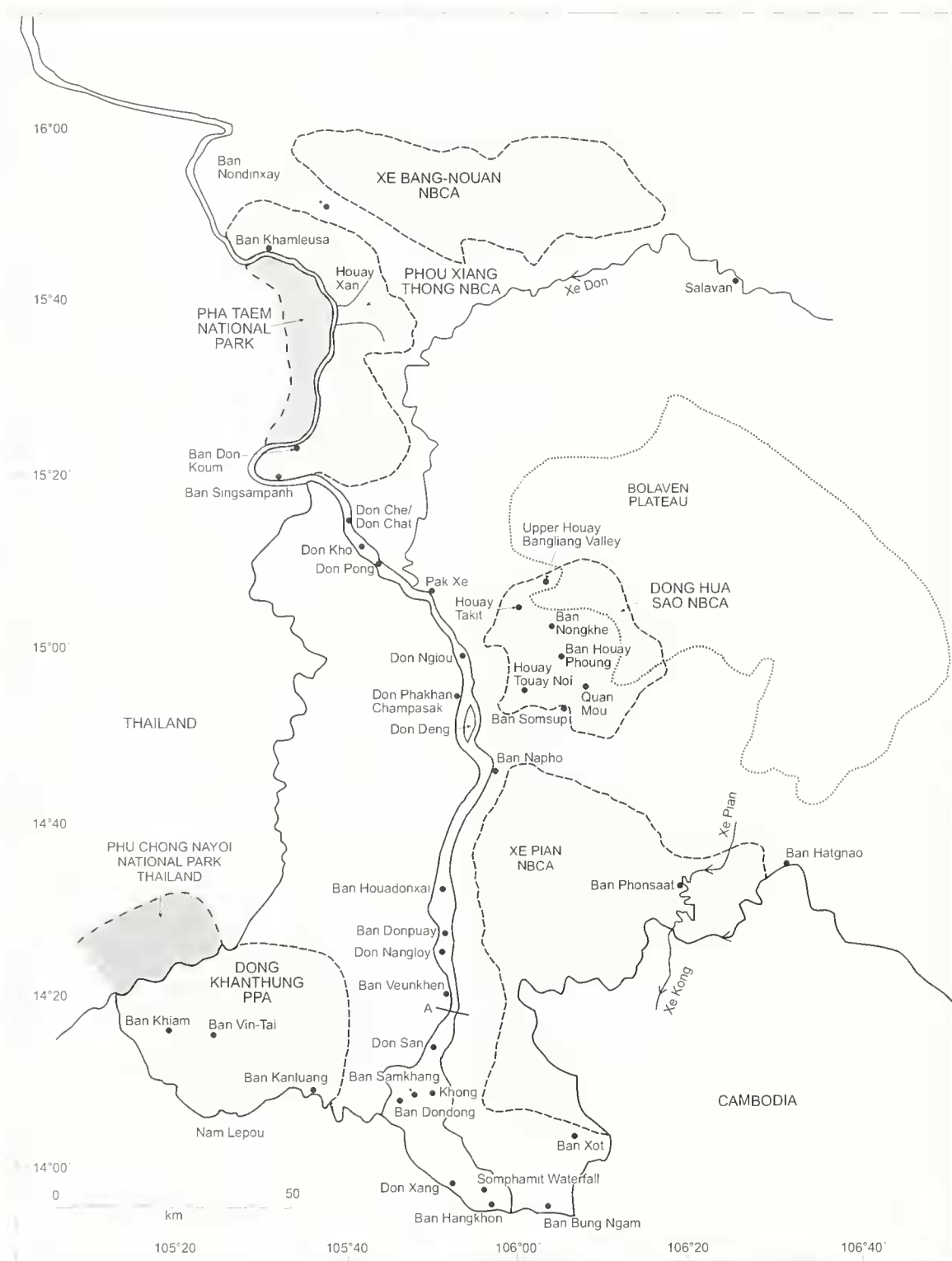


Figure 1. Localities mentioned in the text. A = Approximate northern limit of the Seephandon area. Xe Xou survey area not shown. It lies east of Ban Senamsai.

- Pools south of Attapu town were visited on 1 March (R. J. Tizard *in litt.* 1996).
- The Xe Kong river downstream from Ban Hatgnao (local name Ban Senamsai) to the mouth of the Xe Pian river (in Xe Pian NBCA) and the Xe Pian upstream to Ban Phonsaat were surveyed by boat during 17-21 September (R. J. Tizard *in litt.* 1996).
- The area between Ban Xot and Ban Bung Ngam in southern Champasak Province on was visited on 6-7 August.

METHODS

The same field methods were used as in other recent surveys of birds in southern and central Laos (Table 1), namely:

- 1) Opportunistic diurnal observation, attempting to cover the full range of habitats but with an emphasis on those where Key species were most likely to occur, especially semi-evergreen forest and wetlands.
- 2) Boat-based surveys. These invariably used motorized canoes to maximize distance covered. Wherever possible boats took routes close inshore along islands or sedimentary features. Some features were searched on foot.
- 3) Discussions with local people. These provide valuable indications of the presence of some large or distinctive species/species groups (for example Green Peafowl or storks). In many cases the reported localities were investigated by subsequent field visits. No records based on reports alone are presented in this paper without an explicit statement that this is so.

In addition the Dong Khanthung area was surveyed on one occasion from a light aircraft. Large parts of the area, mapped by Barzen (undated), were overflown at a typical height of about 50 m.

RESULTS: KEY SPECIES COMMUNITIES IN THE MAIN STUDY AREAS

Key species communities in Dong Hua Sao NBCA
Including the 1993 surveys, 24 Key bird species were confirmed from Dong Hua Sao, including five Globally Threatened and ten Globally Near-threatened species. This was a relatively large number compared with several other reserves recently surveyed in Laos (Thewlis *et al.* 1998). Key factors were the wide altitudinal range, the large extent of lowland forest, the abundance of wetlands and the high level of ornithological coverage to date (approximately five person-months). The relatively small populations of the more important species meant that few can be considered of high global significance, and the overall species assemblage was probably of high, rather than very high, significance. However, this richness of species suggested that, given successful management of human activity, the reserve could become more significant in the future.

Green Peafowl were still reported to survive in small numbers but this could not be confirmed during the survey. At Quan Mou, the one previously confirmed site

(Evans and Timmins 1996) numbers are likely to have declined due to the establishment of a new settlement there. The species is at a high risk of extinction in Dong Hua Sao. Only one other Key species typical of deciduous forests has been found, the White-bellied Woodpecker, and there is only one record of this species.

Small numbers of large waterbirds were found in both 1993 and 1996, associated with the numerous pools in semi-evergreen forest of the lowlands. Woolly-necked Stork (two birds) and Lesser Adjutant (two birds) were the most significant waterbirds recorded in 1996. Darter *Anhinga melanogaster* was not found in 1996. Reports suggested that small numbers of White-winged Ducks may occur, at least sporadically, in the same area as the Lesser Adjutants. A party of Grey-headed Lapwings was observed just outside the reserve.

Two species, Lesser Fish Eagle and Blyth's Kingfisher, were closely associated with the larger streams in the lowlands. They occur naturally at low densities and the reserve probably supports only a handful of individuals of each species.

The extensive forests of the lowlands and lower slopes supported large, healthy populations of Bar-bellied Pitta and Grey-faced Tit Babbler, moderate numbers of Wreathed Hornbills (daily records of small groups in some sectors, with one party of 14) and a few Great Hornbills. The hill slopes in particular were thought to be an important refuge for hornbills, which are vulnerable to the high level of hunting in flatland areas, and may find few suitable nesting trees in logged forest. There were also a number of less vocal or more elusive species such as Siamese Fireback, Blue-rumped Pitta *Pitta soror* (recorded in 1993, not confirmed in 1996) and Golden-crested Myna which were probably also present in moderate numbers. Red-collared Woodpecker appeared to occur at very low densities in the flat lowlands (this may be a result of logging) but there were higher densities on the lower hill slopes. Wintering Swinhoe's Minivets were regularly found in semi-evergreen forest in 1996 (six records of singles or small parties).

Two Key species were probably more or less restricted to forest of the level lowlands: Green Imperial Pigeon and Indochinese Green Magpie. The magpie seemed particularly scarce, for unknown reasons.

Two smaller Key species, Red-tailed Laughingthrush *Garrulax milnei* and Green Cochoa *Cochoa viridis* are probably strictly montane in Dong Hua Sao. They were common above 1,000 m in 1993 (Thewlis *et al.* 1996). No new information was gathered about them in 1996.

Key species communities in Phou Xiang Thong NBCA

A total of 12 Key species was confirmed in or very close to the reserve. Of these, three are Globally Threatened and five others are Globally Near-threatened. This is a relatively small number compared with some other reserves surveyed recently in Laos (Thewlis *et al.* 1998), probably due largely to the lack of static wetlands, the limited number of altitudinal zones and the low total of coverage. Populations of many of the Key species were quite low.

The most significant Key bird species for conservation purposes was Green Peafowl, of which at least 13 calling males were located. As a result Phou

Xiang Thong is now considered one of the few reserves in Laos which offers the chance to protect a viable population (Evans 1997).

Two semi-evergreen forest species, Siamese Fireback and Bar-bellied Pitta, are believed to occur at moderately healthy densities in parts of the reserve and may have moderately large total populations. Four other semi-evergreen forest species were much scarcer and apparently highly localized. This may have been in part due to logging in the case of Red-collared Woodpecker, and hunting in the case of Green Imperial Pigeon and Coral-billed Ground Cuckoo. However, the scarcity of the fourth species, Grey-faced Tit Babbler, and the scarcity or absence of various other birds of no conservation concern which do not experience such threats and which had been found commonly at some other sites at similar altitudes nearby (for example Moustached Barbet, Mountain Scops Owl, Velvet-fronted Nuthatch, Mountain Fulvetta, Little Spiderhunter and Purple-naped Sunbird; see Thewlis *et al.* [1996], Evans and Timmins [1998] and Appendix 1 for records from comparable sites) suggest that other factors may also be wholly or partly responsible, such as the dry, low-stature character of the semi-evergreen forest.

Three riverine specialist Key species were found: small numbers of Small Pratincoles (at least five), moderate numbers of River Lapwings (20 or more) and one of the two largest populations of Wire-tailed Swallows recently found in Laos (see Duckworth 1996 for the other). At least 80 Wire-tailed Swallows were noted, including recent fledglings.

Maps in Boonsong and Round (1991) show that Alexandrine Parakeet *Psittacula eupatria* was formerly known from the Pha Taem area in Thailand, but is now probably extinct there. It might thus occur in Phou Xiang Thong, or have once occurred there.

Key species communities in Dong Khanthung Proposed Protected Area

Fifteen Key Species were confirmed in Dong Khanthung in 1996, including four Globally Threatened and five Globally Near-Threatened species. These figures are exceptional considering the short duration of the surveys, and indicate that the area is of outstanding conservation significance. Most important were the large waterbirds, above all a May record of two Giant Ibises and an August record of 75 adjutants *Leptoptilos*, mostly unidentified, including nine nesting pairs. Sarus Cranes were seen and were reported to breed. There were records of two Black-necked Storks, eight Asian Openbills and 28 Woolly-necked Storks. One White-winged Duck was recorded, presumably representing a population contiguous with the strong population in Phou Chong Nayoi National Park, Thailand (Parr *et al.* 1994, Evans *et al.* 1997). Green Peafowl were also observed and were reportedly present throughout the area. Although they were probably in low and dwindling numbers, this site may still be one of the most important in Laos for the species (Evans and Timmins 1996). Asian Golden Weavers occurred in moderate numbers.

Several Key species characteristic of level, low-altitude mixed forest were found, including White-bellied Woodpecker and Green Imperial Pigeon (numbers of the latter were especially large by the standard of other recent Lao records). The dry dipterocarp forests

supported Blossom-headed Parakeet and Rufous-winged Buzzard. Coral-billed Ground Cuckoo was recorded in the more evergreen habitat found along watercourses, but this habitat received relatively little coverage and may prove to be important for many other Key species.

Key species communities along the Mekong river

Although there has still been no comprehensive census, records from 1996 helped to clarify the current status of riverine species in South Laos (see Thewlis *et al.* 1996, 1998, Duckworth *et al.* 1998b). Large gaps in coverage remain, for example, in parts of the Seephandon region and several other islands, which could not be thoroughly searched during boat journeys in 1996. Apart from extensive coverage in the Nam Theun basin, the status of riverine birds elsewhere in Laos remains poorly known and the relative significance of the Mekong in Champasak Province is not clear. However, it is thought to be high, particularly in the Seephandon area (see below).

Small Pratincoles were numerous along the Mekong in Champasak Province, with several concentrations of more than 50 individuals recorded and a total of more than 600 observed. They had a patchy distribution and may have been absent from certain areas. Wire-tailed Swallows were widespread in small numbers. Pied Kingfishers occurred as widely scattered individuals or pairs - it is not clear from historical accounts (Engelbach 1927, 1932) if they were ever more abundant than this in the province.

It is clear that populations of many other species have declined since the studies of Engelbach (1927, 1932) and of David-Beaulieu (1949-1950). For example, Great Thick-knee and Little Tern may now be restricted to one or two sites in Laos but were once considered common in some areas. River Tern and Brahminy Kite too have become very much scarcer than they once were and are now perilously close to extinction in Laos. Numbers of River Lapwings are more healthy but they have also clearly declined (Duckworth *et al.* 1998b). There are few recent records (none of them on the Mekong) of Darter, Spot-billed Pelican *Pelecanus philippensis*, Painted Stork *Mycteria leucocephala*, Black-necked Stork or White-shouldered Ibis *Pseudibis (papillosa) davisoni*, all of which were regularly recorded along the major rivers of southern Laos before 1949 (Thewlis *et al.* 1998). The only recent confirmed Lao record of the once abundant Black-bellied Tern *Sterna acuticauda* is of a vagrant at Chiang Saen on the Lao-Thai border in the north (Heath 1996) and there are no recent records at all of Indian Skimmer *Rynchops albicollis* or White-bellied Sea Eagle *Haliaeetus leucogaster*. These declines are probably due to excessive hunting coupled with the incidental disturbance of nesting birds (especially for those such as terns and waders which nest on sandbars in the river channel since these are heavily used by fishermen, farmers and domestic stock).

The Seephandon area, especially around Ban Hangkhon, was the most important surveyed part of the Mekong for riverine birds. There were notable concentrations of Blue-tailed Bee-eater, Great Thick-knee, River Tern, Brahminy Kite, Pied Kingfisher, Small Pratincole and Wire-tailed Swallow in this area. Other sites of some interest included Don Ngiou (with River Tern and Pied Kingfisher) and Don Kho (with 3-4 pairs

of River Lapwings and a pair each of Little and River Terns).

In the Ban Hangkhon area there were also sizable roost movements of cormorants, many or all of them Little Cormorant, small numbers of three species of vulture visiting the river from the Cambodian side, and a single Malaysian Night Heron.

RESULTS: SELECTED SPECIES ACCOUNTS

A full list of species recorded at all sites is given in Appendix 1. Records are expanded in the text if they provide a new insight into the Lao status of a species, including all those which represent the first confirmed records for Laos or South Laos, or the first recent records for Laos. Only those records that represent new such information are given in the text. Records from the Mekong river outside Phou XiangThong are presented systematically from south to north. Detailed accounts for most Key Species can be found in Thewlis *et al.* (1998) so are not repeated here, although these species are highlighted in Appendix 1. Records of three Key species (Blossom-headed Parakeet, Blue-tailed Bee-eater and Baya Weaver) listed as such for the first time by Duckworth *et al.* (1999) were not detailed by Thewlis *et al.* (1998), so they are presented in full here.

Records of nine species (Slaty-legged Crake, Sanderling, Red-necked Stint, Curlew Sandpiper, Ruff, Red-necked Phalarope, Asian Openbill, Yellow-vented Bulbul and Asian Golden Weaver) are the first published for Laos, although Red-necked Stint and Asian Golden Weaver have been provisionally recorded in the past. Seven other species were new for South Laos. Two species, White-winged Tern and Red-vented Barbet, were apparently new records for Cambodia.

SPOT-BILLED DUCK *Anas poecilorhyncha*

In Dong Khanthung three were seen during aerial surveys on 17 August. Records of daily downriver roost movements at Ban Hangkhon along the Mekong river are given in Table 3. Most of the unidentified ducks were also suspected to be this species. Another Spot-billed Duck was seen in Seephandon near Ban Dondong on 28 April, and two were seen north of Ban Donpuay on 5 May.

Table 3. Evening movements of large ducks at Ban Hangkhon

Date	30/4	1/5	2/5	3/5	4/4
Spot-billed Duck	-	-	3	15	17
large duck sp.	-	13	5	3	17

Other recent records from Laos are from Vientiane town, where it was first recorded in November 1992 (Thewlis *et al.* 1996) and has since been found quite commonly but erratically during winter (Duckworth *et al.* 1998a, Timmins and Tizard in prep.) and Sangthong District, Vientiane Municipality, where it was present in the mid wet season (Duckworth 1996). Delacour and Jabouille (1940) listed it from throughout Laos but it is not clear

which records are referred to since there are only two published primary historical records, one of them an unconfirmed sighting. A party of about ten pairs was seen once in Tranninh (Delacour and Jabouille 1927) and Engelbach (1932) saw a small party probably of this species near Khong (in the Seephandon area) in November of an unspecified year. In the 1960s the species was quite common in Cambodia from mid-December to late February (Thomas 1964) and in Thailand it is currently considered a rare winter visitor, mainly along the Mekong in the extreme north (Boonsong and Round 1991).

The race breeding in Indochina is *A. p. haringtoni* but *A. (p.) zonorhyncha*, perhaps best treated as a separate species, potentially occurs as a migrant (Robson 2000). The Delacour and Jabouille (1927) record referred to *A. p. haringtoni* but other Lao records have not been identified to subspecies.

RED-VENTED BARBET *Megalaima lagrandieri*

In Dong Hua Sao in 1996, in contrast to findings in 1993 (Thewlis *et al.* 1996), the species occurred widely in the flat lowlands down to 200 m, including logged forest and areas more than 10 km from the hill slopes. It is conceivably a seasonal altitudinal migrant or seasonal caller in Dong Hua Sao. Along the Mekong river one was heard calling from a hill on the Cambodian bank opposite Ban Hangkhon on 1 May and 3 May. None was heard on the Lao side. This appears to be the first record for Cambodia (King *et al.* 1975, Inskipp and Mlikovsky in prep.). The wide distribution in Dong Hua Sao and the record from near Ban Hangkhon makes it all the more remarkable that there was only one record from the intervening area of Xe Pian NBCA in 1992-1993 (Thewlis *et al.* 1996).

RED-HEADED TROGON *Harpactes erythrocephalus*

In Dong Hua Sao there were six records during early February from logged, semi-evergreen forest at 200-250 m, at sites within 3 km of the hill slopes. This species was not recorded from the lowlands of Dong Hua Sao in May 1993 but was common in the montane forests in June 1993. It was perhaps overlooked in the lowlands in 1993 but there is a strong possibility that it is an altitudinal migrant at this site. It occurs as low as 300 m further north in Laos (Thewlis *et al.* 1996).

BLUE-TAILED BEE-EATER *Merops philippinus*

Along the Mekong river the species was common throughout the Seephandon area with at least 100 seen along 10-20 km of watercourse. Also several recorded at Don Kho on 28 April and 6 May and at Don Ngiou on 7 May. The only other confirmed recent records from Laos are of presence along the Mekong in Sangthong District, Vientiane Municipality, in small numbers (less than 6 per day) in March and June 1996 (Duckworth 1996, J. W. Duckworth *in litt.* 1999) and of at least six, possibly migrants, in the upper Nam Cham valley on 17 May 1996 (Tizard 1996). Blue-tailed/Blue-throated Bee-eaters *M. viridis* were recorded from the Seephandon area in 1993 (Thewlis *et al.* 1996). King *et al.* (1975) listed Blue-tailed, by implication, for the whole of Laos, but it is not clear how this was determined. It was not listed for Laos by Delacour and Jabouille (1940) and the only primary historical records appear to be

from Central Laos (where small groups occurred on rare occasions in Savannakhet province: David-Beaulieu 1949-1950) and from North Laos (where 15 were seen in the capital of Xiangkhouang Province in April 1941: David-Beaulieu 1944). The many 1996 records thus appear to be the first for South Laos. This species was considered Potentially At Risk in Laos for the first time by Duckworth *et al.* (1999).

BLOSSOM-HEADED PARAKEET *Psittacula roseata*

A group of two was seen in Dong Khanthung on 11 August between Ban Tahin and Ban Po. Moderately large numbers of other parakeets were also seen, but all others identified to species were Red-breasted *P. alexandri*. There was also a provisional record from the lower Xe Xou. This species was considered Potentially At Risk in Laos for the first time by Duckworth *et al.* (1999).

MOUNTAIN SCOPS OWL *Otus spilocephalus*

In Dong Hua Sao in 1996, in contrast to findings in 1993 (Thewlis *et al.* 1996), the species was found widely in the flat lowlands down to 200 m, including logged forest and areas more than 10 km from the hill slopes. As with Red-vented Barbet and Red-headed Trogon it may be an altitudinal migrant or seasonal caller at this site.

GREY NIGHTJAR *Caprimulgus indicus*

In Dong Hua Sao tail and wing feathers were found in degraded semi-evergreen forest beside Nong Houppou (near Ban Nongkhe) on 15 February. This is a rarely recorded species in Laos. There is one other recent record, a single from Houei Nhang Nature Reserve, Vientiane, in October 1992 (J.W. Duckworth *in litt.* 1993, Thewlis *et al.* 1996). Historically there was one record from South Laos (from Thateng, date unrecorded, Engelbach 1932) and a few from North Laos, where two were taken in the far north (Bangs and van Tyne 1931) and it was very localized and fairly rare in Tranninh (David-Beaulieu 1944). However, Delacour and Jabouille (1940) listed it for 'toute l'Indochine' and King *et al.* (1975) apparently took this to indicate records from Central Laos.

SLATY-LEGGED CRAKE *Rallina eurizonoides*

In Dong Hua Sao one was seen along a small seasonal stream bed in unlogged semi-evergreen forest at 400 m in the upper Houay Bangliang valley on 22 February. No previous records were traced for Laos by Inskipp and Mlikovsky (in prep.). Wells and Medway (1976) listed a specimen from 'Ok Yam, Laos' but this site is actually on the Cambodian coast (Robinson 1915). The Dong Hua Sao record is thus the first for Laos.

SANDERLING *Calidris alba*

Along the Mekong river two in winter plumage were seen on 7 May on Don Deng. Inskipp and Mlikovsky (in prep.) traced no previous records from Laos.

DUNLIN *Calidris alpina*

One in breeding plumage was seen on Don Kho on 28 April. This is the first record for South Laos and only the second record for Laos. The first was on the Mekong in North Laos in 1995 (Duckworth *et al.* 1998a).

RED-NECKED STINT *Calidris ruficollis*

Along the Mekong river at least three in full summer plumage were identified from amongst a party of ten Red-necked/ Little Stints *C. ruficollis/minuta* in various plumages at Don Kho on 28 April. One Red-necked Stint was seen there on 6 May. Identification was based on the unstreaked rufous throat and breast, the band of streaks running across the lower chest below the red, and the contrast between the rufescent scapulars (and possibly mantle) and the duller wing coverts (following Lewington *et al.* 1991). Inskipp and Mlikovsky (in prep.) traced no previous records of either species from Laos, but there have been a number of recent unconfirmed records from Vientiane during winter (Duckworth *et al.* 1998a, Timmins and Tizard in prep.).

LONG-TOED STINT *Calidris subminuta*

Along the Mekong river a party of three was seen in summer plumage on Don Kho on 28 April with one there on 6 May. Inskipp and Mlikovsky (in prep.) traced no previous records from Laos, but it was reported from North Laos in December 1995 by Duckworth *et al.* (1998a). This is thus the first record for South Laos and the second record for Laos. Least Sandpiper *Calidris minutilla* (which has never been recorded from tropical Asia) was excluded on the basis of the distinctive upright, long-necked, long-legged appearance of Long-toed, following Hayman *et al.* (1986).

CURLEW SANDPIPER *Calidris ferruginea*

Along the Mekong river five in winter plumage were seen on Don Kho on 28 April. Inskipp and Mlikovsky (in prep.) traced no previous records from Laos.

RUFF *Philomachus pugnax*

Along the Mekong river two in non-breeding plumage were seen on 28 April at Don Kho. Inskipp and Mlikovsky (in prep.) traced no previous records from Laos.

RED-NECKED PHALAROPE *Phalaropus lobatus*

Along the Mekong river a party of 14 was seen on Don Kho on 28 April with one there on 6 May. Three in various stages of moult were seen on Don Nangloy on 5 May. Inskipp and Mlikovsky (in prep.) traced no previous records from Laos.

ORIENTAL PRATINCOLE *Glareola maldivarum*

Along the Mekong river one was seen on Don Kho on 28 April. Duckworth *et al.* (1998a) recognized that all recent and historical records from Laos appear to fall in the period April-May; the current record strengthens that pattern. There is only one other record from South Laos.

LITTLE TERN *Sterna albifrons*

Along the Mekong river a pair, presumably breeding, mobbed the observer intensively in an area near the north tip of Don Kho on 28 April and 6 May. Saunders's Tern *Sterna saundersi* could not be eliminated with the views obtained, but is not known to breed anywhere in South-East Asia, or to occur in freshwater habitats (King *et al.* 1975). This is the only recent record for Laos of a species which was once considered common on the Mekong in southern Laos (Engelbach 1932).

WHITE-WINGED TERN *Chlidonias leucopterus*

Along the Mekong river three were seen at Ban Hangkhon on 4 May and two at Don Kho on 6 May, all in breeding plumage. These represent the first records for South Laos and those from Ban Hangkhon are apparently also the first for Cambodia (King *et al.* 1975, Inskipp and Mlikovsky in prep.). The only other Lao record is that listed by King *et al.* (1975), based on a personal observation by E. C. Dickinson cited by Inskipp and Mlikovsky (in prep.).

MOUNTAIN HAWK EAGLE *Spizaetus nipalensis*

In Dong Hua Sao an adult was seen in degraded semi-evergreen forest beside a clearing at Quan Mou, 280 m, on 28 February. In Phou Xiang Thong one was seen over semi-evergreen forest in the Houay Xan valley, 250 m, on 28 March. There are no previous records from South Laos (King *et al.* 1975).

LITTLE CORMORANT *Phalacrocorax niger*

In Dong Khanthung one was seen on the Nam Lepou on 28 and 29 April, 4 km downstream of Ban Kanluang. Small cormorants were recorded daily at Ban Hangkhon, moving downriver along the Mekong from 16h30 until dusk. Some distant birds could not be distinguished from Indian Cormorant *P. fuscicollis*, but were probably Little Cormorant on the basis of their size and build. Totals of identified and unidentified birds are given in Table 4.

Table 4. Evening movements of small cormorants at Ban Hangkhon

Date	30/4	1/5	2/5	3/5	4/4
Little Cormorant	-	28	1	-	-*
cormorant sp.	30	-	1	85	52

* four seen in the morning

These were the first recent records from Laos. Historical records from South Laos are quite numerous: Engelbach (1927) noted occasional sightings along the Xe Don and its tributaries and, later, Engelbach (1932) stated that it occurred fairly often on the more important rivers of southern Laos, with one record from the Bolovens Plateau.

ASIAN OPENBILL *Anastomus oscitans*

In Dong Khanthung eight were recorded soaring over the Nam Lepou on 9 August. Inskipp and Mlikovsky (in prep.) traced no previous records from Laos. Its occurrence in South Laos was not unexpected, as it is still quite numerous in Cambodia (Mundkur *et al.* 1995).

BLACK-NECKED STORK *Ephippiorhynchus asiaticus*

In Dong Khanthung two were seen on 17 August during an aerial survey. This is the first recent record from Laos of a species which has greatly declined (Thewlis *et al.* 1998). Historically it was recorded in small numbers, mainly in the dry season, from North, Central and South Laos, mainly along the Mekong (Engelbach 1932, Delacour and Greenway 1940, David-Beaulieu 1949-1950).

JAPANESE THRUSH *Turdus cardis*

One was seen on 28 February along the lower Xe Xou. King *et al.* (1975) traced no previous records from South Laos.

BLUE-THROATED FLYCATCHER *Cyornis rubeculoides*

In Dong Hua Sao, found commonly in unlogged semi-evergreen forest from 300 m up to at least 500 m, where it was the commonest *Cyornis*. Not found in the logged lowlands below this altitude. These records were referable to the Indochinese resident race *C. r. klossi*. The only other records of this race from Laos are also from the Bolovens Plateau (Delacour 1929, Thewlis *et al.* 1996, Duckworth *et al.* 1998a), all within the narrow altitudinal belt from 300 to 850 m, suggesting that this subspecies has a very localized distribution within the country. Elsewhere the race occurs only in Cochinchina, South and Central Annam (Robson 2000). There is one Lao record of the migrant race *C. r. glaucicomans*, from Phou Xang He NBCA in April 1993 (Thewlis *et al.* 1996).

BLUETHROAT *Luscinia svecica*

Along the Mekong river, one was seen on Don Kho on 28 April. King *et al.* (1975) traced no previous records for South Laos.

SAND MARTIN *Riparia riparia* / PALE MARTIN *R. diluta*

Along the Mekong river, singles were seen at Don Kho on 30 March and 28 April. About 15 moved north with other hirundines on 5 May along the Mekong between Ban Houadonxai and Ban Napho. These are the first records from South Laos. The only other recent records appear to be presence on unrecorded dates in Vientiane in the winter of 1992-1993 (Thewlis *et al.* 1996). None of these field records could confidently be assigned to species. The only historical records of *R. riparia* from Laos are of rare appearances in Tranninh, usually as isolated individuals or small groups mixing with other hirundines (David-Beaulieu 1944). One of these was taken as a specimen and named *R. r. ijimae*; in view of the recent recognition of Pale Martin as a separate species (Goroshko 1993, cited in Inskipp *et al.* 1996) it would be appropriate to re-examine that specimen and to treat the sight-based records as being unidentified to species.

DUSKY CRAG MARTIN *Hirundo concolor*

In Dong Hua Sao at least 12 were seen at 600 m over the slopes above Ban Nongkhe on 14 February. In Phou Xiang Thong one was seen low over the Mekong on 30 March, downstream of Ban Don Koum. There appear to be no previous records from South Laos (King *et al.* 1975).

YELLOW-VENTED BULBUL *Pycnonotus goiavier*

Along the Mekong river, two were seen in an area of scrub patches with grass and pools at the north end of Don Pong on 6 May. Inskipp and Mlikovsky (in prep.) traced no previous records for Laos. According to King *et al.* (1975), in the Mekong basin the species is only known as far north as Phnom Penh, some 450 km south of Don Pong.

BAYA WEAVER *Ploceus philippinus*

In Dong Khanthung two were seen on 12 August a little north of Ban Khiam. Along the Mekong river, recorded from Don San (2 nests and 6 birds on 28 April), Don Phakan (one nest on 7 May), Don Ngiou (five nests on 7 May) and Don Che/Don Chat (two males and two nests on 6 May). All nests were in trees on islands with steep earth sides. The few other recent records from Laos were reviewed by Thewlis *et al.* (1996). This species was considered Potentially At Risk in Laos for the first time by Duckworth *et al.* (1999).

ASIAN GOLDEN WEAVER *Ploceus hypoxanthus*

In Dong Khanthung two males and possibly a female were seen in sedge-like vegetation by a pool near Ban Khiam on 3 May. Five clearly identifiable males and at least 19 other individuals believed to be this species were found at pools in the area of Ban Khiam in mid-August. Of 29 nests found in August that were believed to be of this species, one had nestlings in and ten had eggs. These nests were also seen widely during the aerial survey. These are the first confirmed records from Laos, although there were provisional records from Xe Pian NBCA in March 1993 (Thewlis *et al.* 1996).

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APPENDIX 1

Status assessments of birds recorded

Rows for unidentified members of a genus exclude records identified to species.

Threatened status:

GT = Globally Threatened;

GNT = Globally Near-threatened;

ARL = At Risk in Laos;

PARL = Potentially At Risk in Laos;

LK = Little Known in Laos;

NARL = Not At Risk In Laos (implicit for all species with no designation, stated explicitly if the species is GT or GNT).

MR (Mekong River):

1, Ban Hangkhon area. ('a' indicates only seen December 1995, 'b' indicates only seen April/May 1996, no letter indicates seen on both occasions, * indicates occurrence in both Laos and Cambodia, ^ indicates occurrence only on the Cambodian bank);

2, Between Ban Hangkhon and Ban Veunkhen;

3, Between Ban Veunkhen and Pakxe;

4, Between Pakxe and Ban Singsamphanh. Only 1996 records are given.

DK (Dong Khanthung): nl = Nam Lepou (* indicates occurrence in the river channel and thus in both Laos and Cambodia); ddf = dry dipterocarp forest; den = evergreen/semi-evergreen forest; aug = recorded on August survey (all previous columns refer to April-May survey). The table below supersedes that of Barzen (undated), which contained some records that have now been retracted.

P (Phou Xiang Thong habitats): ddf = Dry dipterocarp forest; rs = Rocky savanna with patches of mixed deciduous and other forest types; mdf = Mixed deciduous forest; sef = Semi-evergreen forest. The Mekong (Mek) column includes the river, adjacent rocky and sedimentary features, bank vegetation and heavily degraded habitats fringing villages. Columns are amalgamated from assessments in several patches of each habitat type. No extensive areas of mdf were covered, but some species associated with this habitat are highlighted by 'mdf' in the sef column. If there is no other code, the species was not found in sef.

D (Dong Hua Sao sites): All sites were predominantly semi-evergreen forest, except for Ban Somsup.

D1 Houay Takit 170-600 m; D2 Ban Houay Phoung 190-350 m; D3 Middle Houay Namphak 210-600 m; D4 Houay Bangliang 260-650 m; D5 Ban Somsup Mixed deciduous forest 190-280 m; D6 Ban Somsup Semi-evergreen forest 150-280 m; D7 Houay Touay Noy 126-180 m. D1, D2, D3 and D6 had enclaves of cultivation, accounting for the presence of some non-forest birds. Only 1996 records are given. Provisional records of Streak-throated Woodpecker *Picus xanthopygaeus* and Black-

throated Sunbird *Aethopyga saturata* listed by Evans *et al.* (1996a) have now been retracted – they were typographic errors.

Other: other minor study sites, namely the lower Xe Xou (X), the vicinity of Attopu (A) and the Xe Pian and Xe Kong rivers in Xe Pian NBCA (Pi). Only 1996 records are given.

Abundance codes for Phou Xiang Thong and Dong Hua Sao

- C = Common (recorded daily, sometimes repeated records)
 LC = Locally common (i.e. common at some study sites, less common or absent at others)
 P = Present (probably not common) or abundance not assessed
 r = Identified only by remains in this sector
 s = believed to be only found in unlogged slope forest rather than adjacent logged lowland forest in this sector
 k = in D4, only recorded near Houay Katam, not Houay Sout
 Provisional records are marked []
 [R] = credible but unconfirmed report

Table A1 Species recorded from the lowlands of southern Laos during December 1995–September 1996, including areas on the Thai and Cambodian borders

Species	Other	MR	DKnl	DKden	Pddf	Psef	D1	D3	D5	D7				
			DKddf	Dkaug	Prs	PMek	D2	D4	D6					
CHINESE FRANCOLIN <i>Francolinus pintadeanus</i>			C	P	LC	LC								
QUAIL/BUTTONQUAIL sp. <i>Coturnix/Turnix</i>						P								
SCALY-BREASTED PARTRIDGE <i>Arborophila chartonii</i>	X	1b^		P	P	LC	C	C	C	C	C	C		
RED JUNGLEFOWL <i>Gallus gallus</i>	A,X		P	P	P	C	C	P	C	C	P	C	C	P
SILVER PHEASANT <i>Lophura nycthemera</i>											P			
SIAMESE FIREBACK <i>L. diardi</i> GT, PARL				[P]		P	Pr	Pr	Pr					
GREY PEACOCK PHEASANT <i>Polyplectron bicalcaratum</i>							Ps	Psr						
GREEN PEAFOWL <i>Pavo muticus</i> GT, ARL			P			P					[R]			
LESSER WHISTLING-DUCK <i>Dendrocygna javanica</i>		3	P				P				P	P		
WHITE-WINGED DUCK <i>Cairina scutulata</i> GT, ARL			[R]	[R]	P		[R]	[R]						
SPOT-BILLED DUCK <i>Anas poecilorhyncha</i>		1b*, 2, 3			P									
YELLOW-LEGGED BUTTONQUAIL <i>Turnix tanki</i>												P		
WHITE-BROWED PICULET <i>Sasia ochracea</i>						P	P	P	P					
GREY-CAPPED PYGMY WOODPECKER <i>Dendrocopos canicapillus</i>			P		P	LC								
RUFIOUS WOODPECKER <i>Celeus brachyurus</i>		1a	C				P	P		P				
WHITE-BELLIED WOODPECKER <i>Dryocopus javensis</i> PARL			P									P		
LESSER YELLOWNAPE <i>Picus chlorolophus</i>			P				P							
GREATER YELLOWNAPE <i>P. flavinucha</i>						P	P	P	P	P				
LACED WOODPECKER <i>P. vittatus</i>							P					P	P	

Species	Other	MR	DKnl	DKden	Pddf	Prs	Psef	D1	D2	D3	D4	D5	D6	D7
			DKddf	Dkaug	PMek		D3	D5						
RED-COLLARED WOODPECKER <i>P. rabieri</i> GT							P	P						
BLACK-HEADED WOODPECKER <i>P. erythropygius</i>	A, Pi		C					LC						
GREY-HEADED WOODPECKER <i>P. canus</i>							mdf							
COMMON FLAMEBACK <i>Dinopium javanense</i>		1b						P						
GREATER FLAMEBACK <i>Chrysocolaptes lucidus</i>							P	P		P				
FLAMEBACK <i>Dinopium javanense</i> / <i>Chrysocolaptes lucidus</i>				P	P	P	LC	LC		C	C	C	C	C
BAY WOODPECKER <i>Blythipicus pyrrhotis</i>							P	P		C	P			P
BLACK-AND-BUFF WOODPECKER <i>Meiglyptes jugularis</i>					P		P	P	P		P			P
HEART-SPOTTED WOODPECKER <i>Hemicircus canente</i>		1b					P		P					
BLACK-AND-BUFF/HEART-SPOTTED WOODPECKER <i>Meiglyptes jugularis/Hemicircus canente</i>								LC			P			
GREAT SLATY WOODPECKER <i>Mulleripicus pulverulentus</i>				P	P		mdf		P	C			C	P
RED-VENTED BARBET <i>Megalaima lagrandieri</i>		1b^						LC	C	C	C	C		P
LINEATED BARBET <i>M. lineata</i>	X, P	1b^	C	C	P	C	C	LC	P				C	
GREEN-EARED BARBET <i>M. faiostricta</i>		1b*		C		LC	LC	LC		C	C	C		C
MOUSTACHED BARBET <i>M. incognita</i>										C	C	C		
BLUE-EARED BARBET <i>M. australis</i>		1a*		C				LC	C	C	C		C	C
COPPERSMITH BARBET <i>M. haemocephala</i>		1				P	LC	P					C	
ORIENTAL PIED HORNBILL <i>Anthraceros albirostris</i>	X	1*	P*	C	C	P		P	P	C	C	C	P	P
GREAT HORNBILL <i>Buceros bicornis</i> ARL										Pr		Ps		
WREATHED HORNBILL <i>Aceros undulatus</i> ARL										P	P	P	C	
WREATHED/GREAT HORNBILL <i>Aceros undulatus/Buceros bicornis</i> ARL										P	P	P	P	P
COMMON HOOPOE <i>Upupa epops</i>								LC	P					P
ORANGE-BREASTED TROGON <i>Harpactes oreskios</i>		1b							P	C	C	C	C	C
RED-HEADED TROGON <i>H. erythrocephala</i>										P		C	P	P
INDIAN ROLLER <i>Coracias benghalensis</i>	X	1	P*	C	P	P	LC	P		P		P	C	P
DOLLARBIRD <i>Eurystomus orientalis</i>			C*					LC	P					
BLYTH'S KINGFISHER <i>Alcedo hercules</i> GT, PARL												P		
COMMON KINGFISHER <i>A. atthis</i>	X	1*	P*						P	P	P		P	C
BLUE-EARED KINGFISHER <i>A. meninting</i>			P*						P			P		P

Species	Other	MR	DKnl	DKden	Pddf	Psef	D1	D3	D5	D7					
			DKddf	Dkaug	Prs	PMek	D2	D4	D6						
WHITE-WINGED TERN <i>Chlidonias leucopterus</i>		1b*, 4													
TERN <i>Sterna/Chlidonias</i>		2													
OSPREY <i>Pandion haliaetus</i>		1b					P								
JERDON'S BAZA <i>Aviceda jerdoni</i> GNT		1a													
BLACK BAZA <i>A. leuphotes</i>	A, X	1b	P*	P	P	P	P		P						
ORIENTAL HONEY-BUZZARD <i>Pernis ptilorhynchus</i>							P								
BLACK-SHOULDERED KITE <i>Elanus caeruleus</i>					P										
BRAHMINY KITE <i>Haliastur indus</i> ARL		1*, 2	P		P										
LESSER FISH EAGLE <i>Ichthyophaga humilis</i> GNT, ARL								P							
WHITE-RUMPED VULTURE <i>Gyps bengalensis</i> GNT, ARL	X, Pi	1b*													
LONG-BILLED VULTURE <i>G. indicus</i> GNT, ARL		1b*													
RED-HEADED VULTURE <i>Sarcogyps calvus</i> GNT, ARL		1b*													
VULTURE <i>Gyps/Sarcogyps</i> GNT, ARL		1b*	P*												
CRESTED SERPENT EAGLE <i>Spilornis cheela</i>	P	1*		P	P	P	P	LC	C	C	C	C	P	P	P
CRESTED GOSHAWK <i>Accipiter trivirgatus</i>								P		P		P	P	P	
SHIKRA <i>A. badius</i>	A, X	1a	P*	P		P	P	LC	P				P		P
SMALL ACCIPITER <i>Accipiter</i>								P	P		P				
RUFIOUS-WINGED BUZZARD <i>Butastur liventer</i> GNT, NARL	A			P		P	P								
GREY-FACED BUZZARD <i>B. indicus</i>									P						
BLACK EAGLE <i>Ictinaetus malayensis</i>													Pk		
RUFIOUS-BELLIED EAGLE <i>Hieraaetus kienerii</i>														P	
MOUNTAIN HAWK EAGLE <i>Spizaetus nipalensis</i>									P						P
COLLARED FALCONET <i>Microhierax caerulescens</i>	X													P	
ORIENTAL HOBBY <i>Falco severus</i>	X												P	P	
PEREGRINE FALCON <i>Falco peregrinus</i>				P											
LITTLE GREBE <i>Tachybaptus ruficollis</i>										P					
LITTLE CORMORANT <i>Phalacrocorax niger</i> ARL		1b*	P												
LITTLE EGRET <i>Egretta garzetta</i>	A, X	1b*, 2, 3							P	P			P		P
GREY HERON <i>Ardea cinerea</i> PARL										P					

Species	Other	DKnl	DKden	Pddf	Psef	D1	D3	D5	D7
		MR	DKddf	Dkaug	Prs	PMek	D2	D4	D6
PURPLE HERON <i>A. purpurea</i> PARL		1b*	P	P			P		P
GREY/PURPLE HERON <i>A. cinerea/purpurea</i> PARL					P				
GREAT EGRET <i>Casmerodius albus</i>		1a							
INTERMEDIATE EGRET <i>Mesophoyx intermedia</i>						P			
CATTLE EGRET <i>Bubulcus ibis</i>		1*					P		P P
CHINESE POND HERON <i>Ardeola bacchus</i>	A, X	1*, 2	C*	P		P P C			
POND HERON <i>Ardeola</i>					P C	C C C		C C C	
LITTLE HERON <i>Butorides striatus</i>	X	1b*, 2, 3, 4	C*		P P P	P		C C	
MALAYAN NIGHT HERON <i>Gorsachius melanolophus</i>		1b							
CINNAMON BITTERN <i>Ixobrychus cinnamomeus</i>		2	P			P Pr P			
GIANT IBIS <i>Pseudibis gigantea</i> GT, ARL			P						
WOOLLY-NECKED STORK <i>Ciconia episcopus</i> ARL	Pi		P	P		P			
ASIAN OPENBILL <i>Anastomus oscitans</i> GNT, ARL				P					
WOOLLY-NECKED/BLACK STORK <i>Ciconia episcopus/nigra</i>		1b^							
BLACK-NECKED STORK <i>Ephippiorhynchus asiaticus</i> ARL				P					
LESSER ADJUTANT <i>Leptoptilos javanicus</i> GT, ARL			P				P		
ADJUTANT <i>Leptoptilos</i> GT, ARL				P					
EARED PITTA <i>Pitta phayrei</i>					P	P		C	
BLUE-RUMPED/BLUE-NAPE PITTA <i>P. soror/P. nipalensis</i> GNT, LK/PARL					P				
BLUE PITTA <i>Pitta cyanea</i>						Pr		P	Pr
BLUE/EARED PITTA <i>P. cyanea/P. phayrei</i> (calls)					mdf	C P C C			
BAR-BELLIED PITTA <i>P. elliotii</i> GNT, PARL					P+mdf	C P Pr P			Pr
BLUE-WINGED PITTA <i>P. moluccensis</i>		1b		P P					
DUSKY BROADBILL <i>Corydon sumatranus</i>				P	P		P P		P
BLACK-AND-RED BROADBILL <i>Cymbirhynchus macrorhynchus</i>			P						P
BANDED BROADBILL <i>Eurylaimus javanicus</i>					C+mdf	P P C C			C P
SILVER-BREASTED BROADBILL <i>Serilophus lunatus</i>							P P		
LONG-TAILED BROADBILL <i>Psarisomus dalhousiae</i>					P			P	
ASIAN FAIRY BLUEBIRD <i>Irena puella</i>				P	P P	C C C C			P P

Species	Other	MR	DKnl	DKden	Pddf	Prs	Psef	D1	D2	D3	D4	D5	D6	D7	
			DKddf	Dkaug	PMek		D3			D5					
BLUE-WINGED LEAFBIRD <i>Chloropsis cochinchinensis</i>	X	1a					LC	P		P		P		C	P
GOLDEN-FRONTED LEAFBIRD <i>C. aurifrons</i>						P	LC	P							
BROWN SHRIKE <i>Lanius cristatus</i>	A	1a		P					P	P	C				P
BURMESE SHRIKE <i>L. colluriooides</i>							P								
EURASIAN JAY <i>Garrulus glandarius</i>	A					P	P								
RED-BILLED BLUE MAGPIE <i>Urocissa erythrorhyncha</i>	A		P*	P	C		P	P							
INDOCHINESE GREEN MAGPIE <i>Cissa hypoleuca</i> GNT, PARL										P					
[COMMON GREEN MAGPIE <i>C. chinensis</i>]								[P]			[P]				
RUFIOUS TREEPIE <i>Dendrocitta vagabunda</i>				C			P								
RACKET-TAILED TREEPIE <i>Cypsiolina temia</i>	X					P		LC		P		P			
LARGE-BILLED CROW <i>Corvus macrorhynchos</i>	X	1*, 2, 3	C*		P	P		P		P				P	
BLACK-NAPED ORIOLE <i>Oriolus chinensis</i>		1						P	P		P	P		P	P
BLACK-HOODED ORIOLE <i>O. xanthornus</i>					C	P	P	LC	LC		P	P		C	P
LARGE CUCKOOSHRIKE <i>Coracina macei</i>				C	P	P	LC	C		Ps	P			C	
INDOCHINESE CUCKOOSHRIKE <i>C. polioptera</i>					P					P					
BLACK-WINGED CUCKOOSHRIKE <i>C. melaschistos</i>										P	P	P			P
INDOCHINESE/BLACK-WINGED CUCKOOSHRIKE <i>C. polioptera/C. melaschistos</i>														P	
SWINHOLE'S MINIVET <i>Pericrocotus cantonensis</i> GNT, NARL							P				P	P			P
ASHY MINIVET <i>P. divaricatus</i>		1a													
ASHY/SWINHOLE'S MINIVET <i>P. divaricatus/P. cantonensis</i>								[P]	[P]						P
SCARLET MINIVET <i>P. flammeus</i>					P			LC		C	C	C	C	C	C
BAR-WINGED FLYCATCHER-SHRIKE <i>Hemipus picatus</i>	X	1a						P			P				
BLACK DRONGO <i>Dicrurus macrocerus</i>	X	1a								P					
ASHY DRONGO <i>D. leucophaeus</i>	X	1a		P		P		LC	LC	P	C	C	C	C	C
BRONZED DRONGO <i>D. aeneus</i>		1a		P	P				LC		P	C	C	P	P
LESSER RACKET-TAILED DRONGO <i>D. remifer</i>										C	C	C	P		P
SPANGLED DRONGO <i>D. hottentottus</i>	X	1a		P	P		LC	C	LC	P		P	P	C	C
GREATER RACKET-TAILED DRONGO <i>D. paradiseus</i>	A, X	1			C	P	LC	LC	LC	P			P	C	
BLACK-NAPED MONARCH <i>Hypothymis azurea</i>		1a			C	P		P	C		C	C	C	C	C

Species	Other	MR	DKnl	DKden	Pddf	Psef	D1	D3	D5	D7					
			DKddf	Dkaug	Prs	PMek	D2	D4	D6						
ASIAN PARADISE-FLYCATCHER <i>Terpsiphone paradisi</i>		1a				P	P	P	P						
COMMON IORA <i>Aegithina tiphia</i>		1		P	LC										
GREAT IORA <i>A. lafresnayeii</i>		1a				LC	C	C	C	C	P	C	P		
LARGE WOODSHRIKE <i>Tephrodornis gularis</i>				P		mdf			P				P		
WHITE-THROATED ROCK THRUSH <i>Monticola gularis</i>								P		P					
BLUE ROCK THRUSH <i>Monticola solitarius</i>	A, X	1a				P	C	P		P	P		P		
BLUE WHISTLING THRUSH <i>Myophonus caeruleus</i>	X					P	LC	P	C	C	C	C	Pr	P	
ORANGE-HEADED THRUSH <i>Zoothera citrina</i>									P						
JAPANESE THRUSH <i>Turdus cardis</i>	X														
EURASIAN BLACKBIRD <i>Turdus merula</i>	X														
EYEBROWED THRUSH <i>Turdus obscurus</i>						P									
ASIAN BROWN FLYCATCHER <i>Muscicapa dauurica</i>	A	1a		P	P			P		P	P	P		P	
RED-THROATED FLYCATCHER <i>Ficedula parva</i>	A, X	1a			C	C	LC	C	C	C	C	P	C	P	P
VERDITER FLYCATCHER <i>Eumyias thalassina</i>						P			P	P	P				
HAINAN BLUE FLYCATCHER <i>Cyornis hainanus</i>		1a				P		C	C					P	
PALE BLUE FLYCATCHER <i>C. unicolor</i>														P	
BLUE-THROATED FLYCATCHER <i>C. rubeculoides</i>										C	C				
[HILL BLUE FLYCATCHER <i>C. banyumas</i>]													[P]		
[TICKELL'S BLUE FLYCATCHER <i>C. tickelliae</i>]								[P]		[P]					
BLUE FLYCATCHER <i>Cyornis</i> (calls)		1b				LC							C	C	
GREY-HEADED CANARY FLYCATCHER <i>Culicicapa ceylonensis</i>	A	1a				C		C	C	C	C	C	C	C	
RUFIOUS-TAILED ROBIN <i>Luscinia sibilans</i>										P					
SIBERIAN RUBYTHROAT <i>L. calliope</i>		1a													
BLUETHROAT <i>L. svecica</i>		4													
SIBERIAN BLUE ROBIN <i>L. cyane</i>		1a						C	C	C	C		C	P	
ORIENTAL MAGPIE ROBIN <i>Copsychus saularis</i>	X	1		P						P				P	
WHITE-RUMPED SHAMA <i>C. malabaricus</i>	X	1		P		LC	C		C	C	C	C	C	C	
PLUMBEOUS WATER REDSTART <i>Rhyacornis fuliginosus</i>													Pk		
SLATY-BACKED FORKTAIL <i>Emicurus schistaceus</i>							P			C	P				

Species	Other	MR	DKnl	DKden	Pddf	Psef	D1	D3	D5	D7					
			DKddf	Dkaug	Prs	PMek	D2	D4	D6						
STREAKED WREN BABBLER <i>Napothera brevicaudata</i>								C	P						
RUFIOUS-CAPPED/RUFIOUS-FRONTED BABBLER <i>Stachyris ruficeps/S. rufifrons</i>					P										
STRIPED TIT BABBLER <i>Macronous gularis</i>	X	1		C	P	P	C	P	C	C	C	C	C	C	
GREY-FACED TIT BABBLER <i>M. kelleyi</i> GNT, NARL							P	C	C	C	C		C	P	
CHESTNUT-CAPPED BABBLER <i>Timalia pileata</i>					P	P									
MOUNTAIN FULVETTA <i>Alcippe peracensis</i>								C	C	C	P			C	
WHITE-BELLIED YUHINA <i>Yuhina zantholeuca</i>		1a		C			C	C	C	C				P	
INDOCHINESE BUSHLARK <i>Mirafra erythrocephala</i> ²¹						P									
THICK-BILLED FLOWERPECKER <i>Dicaeum agile</i>		1				P	LC	C	C	C	P	P	P		
YELLOW-VENTED FLOWERPECKER <i>D. chrysorrheum</i>							P								
PLAIN FLOWERPECKER <i>D. concolor</i>				P											
SCARLET-BACKED FLOWERPECKER <i>D. cruentatum</i>		1a			P	P	P		C						
FLOWERPECKER <i>Dicaeum</i>		1				P	C	C	C	C	C	C			
RUBY-CHEEKED SUNBIRD <i>Anthreptes singaleusis</i>		1		P			P		P	P				P	
PURPLE-NAPED SUNBIRD <i>Hypogramma hypogrammicum</i>									C	C	C			C	P
PURPLE-THROATED SUNBIRD <i>Nectarinia sperata</i>							P								P
OLIVE-BACKED SUNBIRD <i>N. jugularis</i>	A	1			P	C	C							C	
PURPLE SUNBIRD <i>N. asiatica</i>	A			P											
CRIMSON SUNBIRD <i>Aethopyga siparaja</i>							LC			P	P				
LITTLE SPIDERHUNTER <i>Arachnothera longirostra</i>								P	P	C	C	C		C	C
STREAKED SPIDERHUNTER <i>A. magna</i>											P				
EURASIAN TREE SPARROW <i>Passer montanus</i>	A	1		P											
FOREST WAGTAIL <i>Dendronanthus indicus</i>							P		P	P	P			P	P
WHITE WAGTAIL <i>Motacilla alba</i>	A, X	1*, 2						C							P
YELLOW WAGTAIL <i>M. flava</i>		4													P
YELLOW/CITRINE WAGTAIL <i>M. flava/M. citreola</i>		1b*, 4						P							
GREY WAGTAIL <i>M. cinerea</i>	X						P	P	C	C	C	C	C	P	P
RICHARD'S PIPIT <i>Anthus richardi</i>		1b, 4					P		P						P
PADDYFIELD PIPIT <i>A. rufulus</i>		4							P						

Species	Other	DKnl	DKden	Pddf	Psef	D1	D3	D5	D7
		MR	DKddf	Dkaug	Prs	PMek	D2	D4	D6
OLIVE-BACKED PIPIT <i>A. hodgsoni</i>				LC	LC	P	P		P
BAYA WEAVER <i>Ploceus philippinus</i> PARL	2, 3, 4	P	P						
ASIAN GOLDEN WEAVER <i>P. hypoxanthus</i> GNT, ARL		P	P						
WHITE-RUMPED MUNIA <i>Lonchura striata</i>	1a			P	LC				
SCALY-BREASTED MUNIA <i>Lonchura punctulata</i>					LC			P	C

¹ Calls heard only on slopes; hunted remains on flatlands suspected to have been taken on hill slopes.

² Peafowl were reported from Nong Boua-ton, an unknown locality somewhere north-east of Ban Laogna.

³ White-bellied Woodpecker was recorded in a recent clearing fringed by both SEF and MDF.

⁴ Provisionally identified as Large-tailed Nightjar by Evans *et al.* (1996a).

⁵ The provisional record listed in Evans *et al.* (1996a) has been retracted pending examination of museum skins.

⁶ Mostly calls thought to have been attributable to Thick-billed Pigeon. However, calls of Pin-tailed Green Pigeon *Treron apicauda* and Pompadour Green Pigeon *T. pompadora* were not known by the observers.

⁷ Grey-headed Lapwing was recorded just outside the current reserve boundary.

⁸ Excludes Crested Goshawk.

⁹ A Rufous-winged Buzzard was seen near Ban Nondinxay, about 3 km outside the Phou Xiang Thong boundary.

¹⁰ The first identifiable Chinese Pond Heron in breeding plumage was seen on 18 March.

¹¹ Records of *kleep* calls, not known to be given by Indochinese Green Magpie.

¹² Slender-billed Oriole *O. tenuirostris* was not eliminated in all cases.

¹³ Records from sectors D1 and D2 (Evans *et al.* 1996a) were erroneous.

¹⁴ Records from Phou Xiang Thong were incorrectly listed as provisionally identified Ashy Minivets by Evans *et al.* (1996b).

¹⁵ Orange-bellied birds of the race *philippensis* were seen at Dan Ngou Luam, Dan Louang and along the Mekong mainstream. Non-orange males were recorded more widely.

¹⁶ Yellow-billed birds were widely noted. Black-billed birds were seen occasionally along the Mekong mainstream.

¹⁷ One morph was commonly seen, with a moderately high density of neat streaking on the underside. Identification will await examination of museum specimens.

¹⁸ Records cannot be distinguished between the several species now recognised to be included in the binomial *S. burkii* (sensu lato) (Alström and Olsson 1999).

¹⁹ All laughingthrushes heard were suspected to be White-crested.

²⁰ Probably *Alcippe peracensis groteti*.

²¹ Taxonomy follows Alström (1998) and Violani and Barbagli (1999).

APPENDIX 2 Supplementary Gazetteer

The gazetteer follows the same format as that in Thewlis *et al.* (1998), and only covers localities not included by that work. All localities fall in the 'South Laos' biogeographical area of King *et al.* (1975) and the Central Indochina (10a) subunit of MacKinnon and MacKinnon (1986). Co-ordinates, altitude and place-names have been standardized to follow the *Republique Democratique Populaire Lao Service Geographique d'Etat* 1:100,000 map series. Sites within NBCAs and PNBCAs are not detailed, since they lie within the co-ordinates given for the NBCA. Co-ordinates are rounded to the nearest whole minute.

Name on Lao Government 1:100 000 maps	Co-ordinates	Altitude/m
Ban Bung Ngam	13°57'N 106°07'E	60
Ban Dondong	14°08'N 105°46'E	90
Ban Donpuay	14°27'N 105°51'E	100
Ban Khiam	14°13'N 105°19'E	110
Ban Napho	14°45'N 105°56'E	100
Ban Singsamphanh (local name Ban Mai)	15°19'N 105°30'E	100
Ban Veunkhen (local name Ban Mounlapamok)	14°22'N 105°52'E	100
Don Nangloy	14°24'N 105°51'E	100
Don San	14°14'N 105°50'E	100